```
                          ┌─────────┐
                          │  Start  │
                          └────┬────┘
                               │
                               ▼
              ┌──────────────────────────────────────┐
              │  Collect Employee and other Data      │
              │                                   102 │
              └──────────────────┬───────────────────┘
                                 │
                                 ▼
              ┌──────────────────────────────────────┐
              │  For I =1 (employee 1)                │
              │                                   104 │
              └──────────────────┬───────────────────┘
```

Start

Collect Employee and other Data — 102

For I =1 (employee 1) — 104

Assumption for Wage Load Factor and Pay Increases — 106

Compute Wages for each future year $n(W_n)$ {includes compensation, benefits and other human capital related costs} — 108

Risk
Includes Death, Retirement, Disability, and Withdrawal — 110

Compute Wages adjusted by Risk for each future year n, $E(C_n)$ — 112

Assumption for Discount Rate — 114

Compute iCost
(equals Present Value of $E(C_n)$, based on Discount Rate assumption) — 116

Next I (next employee)
Until Complete — 118

Done

FIG. 1

Productivity

100%

f(x)

g(x)

Date

Q_1 Q_2 Q_3 Q_4

FIG. 2

```
                          ┌──────────────┐
                          │    Start     │
                          └──────┬───────┘
                                 │
                                 ▼
                   ┌─────────────────────────────┐
                   │ Collect Employee and other Data │
                   │                           302 │
                   └─────────────┬───────────────┘
                                 │
                                 ▼
                   ┌─────────────────────────────┐
                   │ For I =1 (employee 1)         │
                   │                           303 │
                   └─────────────┬───────────────┘
                                 │
                                 ▼
                   ┌─────────────────────────────┐
                   │ For J =1 (year 1)             │
                   │                           304 │
                   └─────────────┬───────────────┘
                                 │
                                 ▼
                   ┌─────────────────────────────┐
                   │ For K =1 (job level 1)        │
                   │                           305 │
                   └─────────────┬───────────────┘
                                 │
          ┌──────────────────────┼──────────────────────┐
          ▼                      ▼                        ▼
┌──────────────────┐                          ┌──────────────────────┐
│ Compute Staffing │                          │ Compute Time-Based Low │
│ Cost and Separation │                       │ Productivity Cost (RV2)│
│ Cost (RV1)    306 │      ┌──────────────────┐│                    308 │
└─────────┬────────┘      │ Compute Time-Based Vacancy │└──────────┬───────────┘
          └──────────────▶│ Cost (RV3)           │◀───────────────┘
                          │                   310 │
                          └──────────┬───────────┘
                                     ▼
                   ┌─────────────────────────────┐
                   │ Compute New Hire Risk Cost (RV4) │
                   │                           312 │
                   └─────────────┬───────────────┘
                                 ▼
                   ┌──────────────────────────────────────┐
                   │ Compute individual Actuarial Replacement Value (ARV) │
                   │                                  314 │
                   └─────────────┬────────────────────────┘
                                 ▼
                   ┌─────────────────────────────┐
                   │ Next K (next job level)       │
                   │ Until Complete                │
                   │                           315 │
                   └─────────────┬───────────────┘
                                 ▼
                   ┌─────────────────────────────┐
                   │ Next J (next year)            │
                   │ Until Complete                │
                   │                           316 │
                   └─────────────┬───────────────┘
                                 ▼
                   ┌─────────────────────────────┐
                   │ Next I (next employee)        │
                   │ Until Complete                │
                   │                           317 │
                   └─────────────┬───────────────┘
                                 ▼
                          ┌──────────────┐
                          │    Done      │
                          └──────────────┘
```

FIG. 3

Productivity

FIG. 4

Start

For I =1 (employee 1)   502

Retrieve Wages and Actuarial Replacement
Values of Individual I
                                                              504

Assumptions for Productivity, Advancement
and Risk (Risk includes Death, Retirement,
Disability, and Withdrawal)
                                                              508

Compute Expected Revenue $E(R_n)$ for each
future year n
(Revenue adjusted by Risk and productivity)
                                                              510

Assumption for Discount Rate   512

Compute iRevenue
(equals Present Value of $E(R_n)$, based on
Discount Rate assumption)
                                                              514

Next I (next employee)
Until Complete
                                                              516

Done

FIG. 5

```
                    ╭─────────────╮
                    │    Start    │
                    ╰─────────────╯
                           │
                           ▼
              ┌──────────────────────────┐
              │    For I =1 (employee 1) │
              │                      602 │
              └──────────────────────────┘
                           │
                           ▼
              ┌──────────────────────────┐
              │ Retrieve Expected Revenue│
              │ E(R_n) and Expected Cost │
              │ E(C_n)               604 │
              └──────────────────────────┘
                           │
                           ▼
              ┌──────────────────────────┐                ┌──────────────────┐
              │   Compute iProfit E(P_n) │                │  Assumption for  │
              │  {equals E(R_n)- E(C_n)} │                │  Discount Rate   │
              │                      606 │                │              608 │
              └──────────────────────────┘                └──────────────────┘
                           │◄──────────────────────────────────────┘
                           ▼
              ┌──────────────────────────┐
              │       Compute EVi        │
              │ (equals Present Value of │
              │ E(P_n), based on Discount│
              │ Rate assumption)     610 │
              └──────────────────────────┘
                           │
                           ▼
              ┌──────────────────────────┐
              │ Compute Expected Working │
              │     Lifetime (ewl)       │
              │                      612 │
              └──────────────────────────┘
                           │
                           ▼
              ┌──────────────────────────┐
              │    Compute Annual EVi    │
              │     (equals EVi/ewl)     │
              │                      614 │
              └──────────────────────────┘
                           │
                           ▼
              ┌──────────────────────────┐
              │  Next I (next employee)  │
              │      Until Complete      │
              │                      616 │
              └──────────────────────────┘
                           │
                           ▼
                    ╭─────────────╮
                    │    Done     │
                    ╰─────────────╯
```

- For I =1 (employee 1) 602
- Retrieve Expected Revenue $E(R_n)$ and Expected Cost $E(C_n)$ 604
- Compute iProfit $E(P_n)$ {equals $E(R_n)- E(C_n)$} 606
- Assumption for Discount Rate 608
- Compute EVi (equals Present Value of $E(P_n)$, based on Discount Rate assumption) 610
- Compute Expected Working Lifetime (ewl) 612
- Compute Annual EVi (equals EVi/ewl) 614
- Next I (next employee) Until Complete 616

FIG. 6

Figure 7A-1. Sample Calculation of Actuarial Replacement Value and Actuarial Replacement Wage Load Factor by Job Level for the first three years for Employee 1						
Current Job Level		1				
Date of Birth		1/1/1978				
Date of Hire		1/1/1997				
Gender		Male				
Year		1	2	2	3	3	3
Job Level		1	1	2	1	2	3
Pay		$38,462	$40,769[1]	$40,769	$43,215[1]	$43,215	$43,215
Wage = Pay x 1.3		$50,000	$53,000	$53,000	$56,180	$56,180	$56,180
Dollar-Based Costs							
A	Based on Wage	$3,500[2]	$3,710[2]	$5,300[3]	$3,933[2]	$5,618[3]	$5,618[3]
B	Not based on Wage	$1,105	$1,138[4]	$11,742[5]	$1,172[4]	$12,094[4]	$16,550[6]
Time-Based Low Productivity Costs (based on equivalent unproductive days):							
C	New Hire low productivity – days	70	70	155	70	155	190
D	Pre-separation low productivity – days	2	2	5	2	5	10
E	Internal Required Rate of Return	10%	10%	10%	10%	10%	10%
Time-Based Vacancy Cost:							
F	Vacancy (time-to-start) – days	78	78	112	78	112	112
New Hire Risk Cost:							
G	EWL for existing employee	10.6	10.8	10.8	11.1	11.1	11.1
H	EWL for replacement (new employee)	7.1	7.2	7.2	7.4	7.4	7.4
Actuarial Replacement Value Development:							
I	Wages	$50,000	$53,000	$53,000	$56,180	$56,180	$56,180
J	Equivalent Unproductive Days, other than vacancy = [C+D]	72	72	160	72	160	200
RV[1] K	Dollar Based Costs Total = [A + B]	$4,605	$4,848	$17,042	$5,105	$17,712	$22,168
RV[2] L	Time-Based Low Productivity Costs = (J/365)*[I*(1+E)]	$10,849	$11,500	$25,556	$12,190	$27,090	$33,862
RV[3] M	Time-Based Vacancy Cost = (F/365)*[K+L]	$3,302	$3,494	$13,071	$3,696	$13,747	$17,193
RV[4] N	New Hire Risk Cost = [K + L + M]*[G/H –1]	$9,246	$9,921	$27,835	$10,496	$29,275	$36,612
ARV O	Actuarial Replacement Value = K + L + M + N	$28,002	$29,763	$83,504	$31,487	$87,824	$109,835
P	ARV as wage load factor = [O ÷ I]	0.56	0.56	1.58	0.56	1.56	1.96
Q	Actuarial Revenue wage load factor = [1+ P]	1.56[7]	1.56	2.58[7]	1.56[7]	2.56[7]	2.96[7]

[1] Previous year pay increased due to inflation and merit (assumed to be 6% per year)

[2] 7% of Wage

[3] 10% of Wage

[4] Previous year figure increased by inflation (assumed to be 3% per year)

[5] $ 11,400 in 2001 increased by inflation (assumed to be 3% per year)

[6] $ 15,600 in 2001 increased by inflation (assumed to be 3% per year)

[7] ARWLF by Job Level is used as one of the inputs to Figure 7B (row C)

Figure 7A-2. Sample Calculation of Actuarial Replacement Value and Actuarial Replacement Wage Load Factor by Job Level for the first three years for Employee 2					
Current Job Level		2			
Date of Birth		1/1/1957			
Date of Hire		1/1/1996			
Gender		Female			
Year		1	2	2	3	3
Job Level		2	2	3	2	3
Pay		$76,923	$81,538[1]	$81,538	$86,431[1]	$86,431
Wage = Pay x 1.3		$100,000	$106,000	$106,000	$112,360	$112,360
Dollar-Based Costs						
A	Based on Wage	$10,000[2]	$10,600[2]	$10,600[2]	$11,236[2]	$11,236
B	Not based on Wage	$11,400	$11,742[3]	$16,068[4]	$12,094[3]	$16,550
Time-Based Low Productivity Costs (based on equivalent unproductive days):						
C	New Hire low productivity – days	155	155	190	155	190
D	Pre-separation low productivity – days	5	5	10	5	10
E	Internal Required Rate of Return	10%	10%	10%	10%	10%
Time-Based Vacancy Cost:						
F	Vacancy (time-to-start) – days	112	112	112	112	112
New Hire Risk Cost:						
G	EWL for existing employee	11.9	11.3	11.3	10.6	10.6
H	EWL for replacement (new employee)	11.0	10.5	10.5	9.9	9.9
Actuarial Replacement Value Development:						
I	Wages	$100,000	$106,000	$106,000	$112,360	$112,360
J	Equivalent Unproductive Days, other than vacancy = [C+D]	160	160	200	160	200
RV[1] K	Dollar Based Costs Total = [A + B]	$21,400	$22,342	$26,668	$23,330	$27,786
RV[2] L	Time-Based Low Productivity Costs = (J/365)*[I*(1+E)]	$48,219	$51,112	$63,890	$54,179	$67,724
RV[3] M	Time-Based Vacancy Cost = (F/365)*[K+L]	$21,363	$22,539	$27,788	$23,784	$29,307
RV[4] N	New Hire Risk Cost = [K + L + M]*[G/H –1]	$7,444	$7,314	$9,017	$7,162	$8,825
ARV O	Actuarial Replacement Value = K + L + M + N	$98,426	$103,307	$127,363	$108,455	$133,642
P	Actuarial Replacement Value as wage load factor = [O ÷ I]	0.98	0.97	1.20	0.97	1.19
Q	Actuarial Revenue wage load factor = [1+ P]	1.98[5]	1.97[5]	2.20[5]	1.97[5]	2.19

[1] Previous year pay increased due to inflation and merit (assumed to be 6% per year)

[2] 10% of Wage

[3] Previous year figure increased by inflation (assumed to be 3% per year)

[4] $ 15,600 in 2001 increased by inflation (assumed to be 3% per year)

[5] ARWLF by Job Level is used as one of the inputs to Figure 7B (row C)

Figure 7B. Sample Calculation of Weighted Average ARWLF

Employee 1

A	Year	1	2	3
1	Job Level 1			
	Age	23	24	25
	Service	3	4	5
	Headcount	1.00000	0.80000	0.60000
	Promoted to Level 2	0.20000	0.25000	0.35000
	Promoted headcount	0.20000	0.20000	0.21000
2	Job Level 2			
	Service		0	1
	Headcount		0.20000	0.19000
	Promotd to Level 3		0.05000	0.14000
	Promoted headcount		0.01000	0.02660
3	Job Level 2			
	Service			0
	Headcount			0.20000
	Promoted to Level 3			0.06000
	Promoted headcount			0.01200
4	Job Level 3			
	Headcount			0.01000
B	$P_n(1)$	1.00000	0.80000	0.60000
	$P_n(2)$	0.00000	0.20000	0.39000
	$P_n(3)$	0.00000	0.00000	0.01000
	Total	1.00000	1.00000	1.00000
C	$ARWLF_n(1)$	1.56	1.56	1.56
	$ARWLF_n(2)$		2.58	2.56
	$ARWLF_n(3)$			2.96
	$ARWLF_n$	1.56	1.76	1.96

Employee 2

		1	2	3
	Job Level 2			
	Age	44	45	46
	Service	5	6	7
	Headcount	1.00000	0.61000	0.28670
	Promoted to Level 3	0.39000	0.53000	0.72000
	Promoted headcount	0.39000	0.32330	0.20642
	Job Level 3			
	Headcount		0.39000	0.39000
	Job Level 3			
	Headcount			0.32330
	$P_n(1)$	0.00000	0.00000	0.00000
	$P_n(2)$	1.00000	0.61000	0.28670
	$P_n(3)$	0.00000	0.39000	0.71330
	Total	1.00000	1.00000	1.00000
	$ARWLF_n(1)$			
	$ARWLF_n(2)$	1.98	1.97	1.97
	$ARWLF_n(3)$		2.2	2.19
	$ARWLF_n$	1.98	2.06	2.13

							Wage	
					Wage		Load	Minimum
			Annual	Salary	Salary		Productivity	Factor	Revenue
Date	Age	Service	Salary	Increase	Multiple	Wage	Factor	ARWLF	Potential
			(1)		(2)	(3) = (1) x (2)	(4)	(5)	(6) = (3) x (4) x (5)
1/1/2001	23	4	$38,462	0.06	1.30	$50,000	1.00	1.560	$78,000
1/1/2002	24	5	$40,769	0.06	1.30	$53,000	1.00	1.760	$93,280
1/1/2003	25	6	$43,215	0.06	1.30	$56,180	1.00	1.960	$110,113
1/1/2004	26	7	$45,808	0.06	1.30	$59,551	1.00	1.999	$119,054
1/1/2005	27	8	$48,557	0.06	1.30	$63,124	1.00	2.039	$128,721
1/1/2006	28	9	$51,470	0.06	1.30	$66,911	1.00	2.080	$139,173
1/1/2007	29	10	$54,558	0.06	1.30	$70,926	1.00	2.122	$150,474
1/1/2008	30	11	$57,832	0.06	1.30	$75,181	1.00	2.164	$162,693
1/1/2009	31	12	$61,302	0.06	1.30	$79,692	1 00	2.207	$175,903
1/1/2010	32	13	$64,980	0.06	1.30	$84,474	1.00	2.251	$190,186
1/1/2011	33	14	$68,879	0.06	1.30	$89,542	1.00	2 296	$205,630
1/1/2012	34	15	$73,011	0.06	1.30	$94,915	1.00	2.342	$222,327
1/1/2013	35	16	$77,392	0.06	1.30	$100,610	1.00	2.389	$240,380
1/1/2014	36	17	$82,036	0.06	1.30	$106,646	1.00	2.437	$259,899
1/1/2015	37	18	$86,958	0.06	1.30	$113,045	1.00	2.486	$281,002
1/1/2016	38	19	$92,175	0.06	1.30	$119,828	1 00	2.535	$303,820
1/1/2017	39	20	$97,706	0.06	1.30	$127,017	1.00	2.586	$328,490
1/1/2018	40	21	$103,568	0.06	1.30	$134,639	1.00	2.638	$355,163
1/1/2019	41	22	$109,782	0.06	1.30	$142,717	1.00	2.691	$384,002
1/1/2020	42	23	$116,369	0.06	1.30	$151,280	1.00	2.744	$415,183
1/1/2021	43	24	$123,351	0.06	1.30	$160,357	1.00	2 799	$448,896
1/1/2022	44	25	$130,752	0.06	1.30	$169,978	1.00	2.855	$485,347
1/1/2023	45	26	$138,597	0.06	1.30	$180,177	1.00	2.912	$524,757
1/1/2024	46	27	$146,913	0.06	1.30	$190,987	1.00	2.971	$567,367
1/1/2025	47	28	$155,728	0.06	1.30	$202,447	1.00	3.030	$613,437
1/1/2026	48	29	$165,072	0.06	1.30	$214,593	1.00	3.091	$663,248
1/1/2027	49	30	$174,976	0.06	1.30	$227,469	1.00	3.153	$717,104
1/1/2028	50	31	$185,475	0.06	1.30	$241,117	1.00	3.216	$775,333
1/1/2029	51	32	$196,603	0.06	1.30	$255,584	1.00	3.280	$838,290
1/1/2030	52	33	$208,399	0.06	1.30	$270,919	1.00	3.345	$906,359
1/1/2031	53	34	$220,903	0.06	1.30	$287,174	1.00	3.412	$979,956
1/1/2032	54	35	$234,157	0.06	1.30	$304,405	1.00	3.481	$1,059,528
1/1/2033	55	36	$248,207	0.06	1.30	$322,669	-1.00	3.550	$1,145,562
1/1/2034	56	37	$263,099	0.06	1.30	$342,029	1.00	3.621	$1,238,581
1/1/2035	57	38	$278,885	0.06	1.30	$362,551	1.00	3.694	$1,339,154
1/1/2036	58	39	$295,618	0.06	1.30	$384,304	1.00	3.768	$1,447,893
1/1/2037	59	40	$313,356	0.06	1.30	$407,362	1.00	3.843	$1,565,462
1/1/2038	60	41	$332,157	0.06	1.30	$431,804	1.00	3.920	$1,692,578
1/1/2039	61	42	$352,086	0.06	1.30	$457,712	1.00	3.998	$1,830,015
1/1/2040	62	43	$373,211	0.06	1.30	$485,175	1.00	4.078	$1,978,612
1/1/2041	63	44	$395,604	0 06	1.30	$514,285	1.00	4.160	$2,139,276
1/1/2042	64	45	$419,340	0.06	1.30	$545,143	1.00	4.243	$2,312,985
1/1/2043	65	46	$0	0.06	1.30	$0	1.00	4.328	$0

Figure 7C-1. Sample Calculation of EVi for Employee 1 (page 1)

		Figure 7C-1. Sample Calculation of EVi for Employee 1 (page 2)					
Date	Age	Beg. Year Risk Adjusted Head Count	Mortality Risk[1]	Retirement Risk[1]	Turnover Risk[1]	Disability Risk[1]	Total Retention Risk
		(7)	(8)	(9)	(10)	(11)	$(12) = (8) + (9) + (10) + (11)$
1/1/2001	23	1.000000	0.042%	0.000%	10.000%	0.093%	10.135%
1/1/2002	24	0.898646	0.044%	0.000%	10.000%	0.093%	10.137%
1/1/2003	25	0.807547	0.046%	0.000%	10.000%	0.133%	10.179%
1/1/2004	26	0.725343	0.049%	0.000%	10.000%	0.133%	10.182%
1/1/2005	27	0.651490	0.051%	0.000%	10.000%	0.133%	10.184%
1/1/2006	28	0.585141	0.054%	0.000%	9.500%	0.133%	9.687%
1/1/2007	29	0.528457	0.057%	0.000%	9.500%	0.133%	9.690%
1/1/2008	30	0.477248	0.061%	0.000%	9.000%	0.198%	9.259%
1/1/2009	31	0.433061	0.065%	0.000%	9.000%	0.198%	9.263%
1/1/2010	32	0.392949	0.069%	0.000%	8.500%	0.198%	8.767%
1/1/2011	33	0.358500	0.073%	0.000%	8.000%	0.198%	8.271%
1/1/2012	34	0.328847	0.079%	0.000%	7.500%	0.198%	7.777%
1/1/2013	35	0.303275	0.086%	0.000%	7.000%	0.283%	7.369%
1/1/2014	36	0.280926	0.091%	0.000%	6.500%	0.283%	6.874%
1/1/2015	37	0.261616	0.097%	0.000%	6.000%	0.283%	6.380%
1/1/2016	38	0.244926	0.104%	0.000%	5.500%	0.283%	5.887%
1/1/2017	39	0.230508	0.113%	0.000%	5.000%	0.283%	5.396%
1/1/2018	40	0.218070	0.124%	0.000%	4.500%	0.390%	5.014%
1/1/2019	41	0.207136	0.137%	0.000%	4.000%	0.390%	4.527%
1/1/2020	42	0.197759	0.153%	0.000%	3.500%	0.390%	4.043%
1/1/2021	43	0.189764	0.172%	0.000%	3.000%	0.390%	3.562%
1/1/2022	44	0.183006	0.193%	0.000%	2.500%	0.390%	3.083%
1/1/2023	45	0.177363	0.218%	0.000%	2.000%	0.527%	2.745%
1/1/2024	46	0.172494	0.247%	0.000%	2.000%	0.527%	2.774%
1/1/2025	47	0.167709	0.279%	0.000%	2.000%	0.527%	2.806%
1/1/2026	48	0.163003	0.314%	0.000%	2.000%	0.527%	2.841%
1/1/2027	49	0.158373	0.351%	0.000%	2.000%	0.527%	2.878%
1/1/2028	50	0.153814	0.391%	5.000%	0.000%	0.849%	6.240%
1/1/2029	51	0.144216	0.432%	5.500%	0.000%	0.849%	6.781%
1/1/2030	52	0.134436	0.476%	6.000%	0.000%	0.849%	‒ 7.325%
1/1/2031	53	0.124590	0.520%	6.500%	0.000%	0.849%	7.869%
1/1/2032	54	0.114786	0.566%	7.000%	0.000%	0.849%	8.415%
1/1/2033	55	0.105126	0.613%	7.500%	0.000%	1.398%	9.511%
1/1/2034	56	0.095128	0.662%	8.000%	0.000%	1.398%	10.060%
1/1/2035	57	0.085558	0.714%	8.500%	0.000%	1.398%	10.612%
1/1/2036	58	0.076479	0.772%	9.000%	0.000%	1.398%	11.170%
1/1/2037	59	0.067936	0.838%	9.500%	0.000%	1.398%	11.736%
1/1/2038	60	0.059963	0.916%	10.000%	0.000%	1.552%	12.468%
1/1/2039	61	0.052487	1.006%	20.000%	0.000%	1.552%	22.558%
1/1/2040	62	0.040647	1.113%	30.000%	0.000%	1.552%	32.665%
1/1/2041	63	0.027369	1.239%	40.000%	0.000%	1.552%	42.791%
1/1/2042	64	0.015658	1.387%	50.000%	0.000%	1.552%	52.939%
1/1/2043	65	0.007369	1.559%	100.000%	0.000%	0.835%	100.000%
Total		10.648721					

[1] Figure 7D shows the decrement rates used in this calculation

						Discounted	Discounted	Discounted

Figure 7C-1. Sample Calculation of Evi for Employee 1 (page 3)

Date	Age	Expected Cost $E(C_n)$	Expected Revenue $E(R_n)$	Expected Profit $E(P_n)$	Discount Factor	Discounted Expected Cost	Discounted Expected Revenue	Discounted Expected Profit
		$(13) = (3) \times (7) \times [1 - (12)]$	$(14) = (6) \times (7) \times [1 - (12)]$	$(15) = (14) - (13)$	(16)	$(17) = (13) \times (16)$	$(18) = (14) \times (16)$	$(19) = (18) - (17)$
1/1/2001	23	$44,932	$70,094	$25,162	1.0000	$44,932	$70,094	$25,162
1/1/2002	24	$42,800	$75,328	$32,528	0.9091	$38,909	$68,480	$29,571
1/1/2003	25	$40,750	$79,869	$39,120	0.8264	$33,677	$66,008	$32,330
1/1/2004	26	$38,797	$77,562	$38,766	0.7513	$29,149	$58,274	$29,125
1/1/2005	27	$36,936	$75,320	$38,384	0.6830	$25,228	$51,444	$26,217
1/1/2006	28	$35,360	$73,547	$38,187	0.6209	$21,956	$45,667	$23,711
1/1/2007	29	$33,849	$71,813	$37,964	0.5645	$19,107	$40,537	$21,430
1/1/2008	30	$32,558	$70,456	$37,898	0.5132	$16,707	$36,155	$19,447
1/1/2009	31	$31,315	$69,121	$37,806	0.4665	$14,609	$32,245	$17,637
1/1/2010	32	$30,284	$68,182	$37,898	0.4241	$12,843	$28,916	$16,072
1/1/2011	33	$29,446	$67,621	$38,175	0.3855	$11,353	$26,071	$14,718
1/1/2012	34	$28,785	$67,426	$38,641	0.3505	$10,089	$23,632	$13,543
1/1/2013	35	$28,264	$67,529	$39,265	0.3186	$9,006	$21,517	$12,511
1/1/2014	36	$27,900	$67,994	$40,093	0.2897	$8,082	$19,695	$11,614
1/1/2015	37	$27,688	$68,825	$41,137	0.2633	$7,291	$18,124	$10,833
1/1/2016	38	$27,621	$70,033	$42,412	0.2394	$6,612	$16,765	$10,153
1/1/2017	39	$27,699	$71,634	$43,935	0.2176	$6,028	$15,590	$9,562
1/1/2018	40	$27,889	$73,567	$45,679	0.1978	$5,518	$14,555	$9,037
1/1/2019	41	$28,224	$75,940	$47,716	0.1799	$5,076	$13,658	$8,582
1/1/2020	42	$28,708	$78,787	$50,080	0.1635	$4,694	$12,882	$8,188
1/1/2021	43	$29,346	$82,151	$52,804	0.1486	$4,362	$12,211	$7,849
1/1/2022	44	$30,148	$86,083	$55,935	0.1351	$4,074	$11,632	$7,559
1/1/2023	45	$31,079	$90,518	$59,438	0.1228	$3,818	$11,120	$7,302
1/1/2024	46	$32,030	$95,153	$63,122	0.1117	$3,577	$10,626	$7,049
1/1/2025	47	$32,999	$99,992	$66,993	0.1015	$3,350	$10,152	$6,801
1/1/2026	48	$33,986	$105,040	$71,055	0.0923	$3,137	$9,695	$6,558
1/1/2027	49	$34,988	$110,301	$75,313	0.0839	$2,936	$9,255	$6,319
1/1/2028	50	$34,773	$111,816	$77,043	0.0763	$2,652	$8,529	$5,877
1/1/2029	51	$34,360	$112,697	$78,337	0.0693	$2,383	$7,815	$5,432
1/1/2030	52	$33,754	$112,923	$79,169	0.0630	$2,128	$7,119	$4,991
1/1/2031	53	$32,964	$112,485	$79,521	0.0573	$1,889	$6,446	$4,557
1/1/2032	54	$32,001	$111,384	$79,383	0.0521	$1,667	$5,803	$4,136
1/1/2033	55	$30,695	$108,975	$78,280	0.0474	$1,454	$5,161	$3,708
1/1/2034	56	$29,263	$105,971	$76,707	0.0431	$1,260	$4,563	$3,303
1/1/2035	57	$27,727	$102,417	$74,689	0.0391	$1,085	$4,009	$2,924
1/1/2036	58	$26,108	$98,364	$72,256	0.0356	$929	$3,500	$2,571
1/1/2037	59	$24,427	$93,870	$69,443	0.0323	$790	$3,037	$2,246
1/1/2038	60	$22,664	$88,838	$66,174	0.0294	$667	$2,613	$1,946
1/1/2039	61	$18,604	$74,384	$55,780	0.0267	$497	$1,989	$1,491
1/1/2040	62	$13,279	$54,153	$40,874	0.0243	$323	$1,316	$993
1/1/2041	63	$8,053	$33,496	$25,444	0.0221	$178	$740	$562
1/1/2042	64	$4,017	$17,044	$13,027	0.0201	$81	$342	$262
1/1/2043	65	$0	$0	$0	0.0183	$0	$0	$0
Total						$374,102	$817,982	$443,880

iRevenue		$817,982
iCost		$374,102
Evi = iRevenue - iCost		$443,880
EWL		10 648721
Annual EVi= Evi / EWL		$41,684

Figure 7C–2. Sample Calculation of EVi for Employee 2 (page 1)

Date	Age	Service	Annual Salary (1)	Salary Increase	Wage Salary Multiple (2)	Wage (3) = (1) x (2)	Productivity Factor (4)	Wage Load Factor ARWLF (5)	Minimum Revenu Potentia (6) = (3) x (4) x (5)
1/1/2001	44	5	$76,923	0.06	1.30	$100,000	1.00	1.980	$198,00
1/1/2002	45	6	$81,538	0.06	1.30	$106,000	1.00	2.060	$218,36
1/1/2003	46	7	$86,431	0.06	1.30	$112,360	1.00	2.130	$239,32
1/1/2004	47	8	$91,617	0.06	1.30	$119,102	1.00	2.173	$258,76
1/1/2005	48	9	$97,114	0.06	1.30	$126,248	1.00	2.216	$279,77
1/1/2006	49	10	$102,940	0.06	1.30	$133,823	1.00	2.260	$302,48
1/1/2007	50	11	$109,117	0.06	1.30	$141,852	1.00	2.306	$327,05
1/1/2008	51	12	$115,664	0.06	1.30	$150,363	1.00	2.352	$353,60
1/1/2009	52	13	$122,604	0.06	1.30	$159,385	1.00	2.399	$382,32
1/1/2010	53	14	$129,960	0.06	1.30	$168,948	1.00	2.447	$413,36
1/1/2011	54	15	$137,758	0.06	1.30	$179,085	1.00	2.496	$446,93
1/1/2012	55	16	$146,023	0.06	1.30	$189,830	1.00	2.546	$483,22
1/1/2013	56	17	$154,784	0.06	1.30	$201,220	1.00	2.596	$522,45
1/1/2014	57	18	$164,071	0.06	1.30	$213,293	1.00	2.648	$564,88
1/1/2015	58	19	$173,916	0.06	1.30	$226,090	1.00	2.701	$610,75
1/1/2016	59	20	$184,351	0.06	1.30	$239,656	1.00	2.755	$660,34
1/1/2017	60	21	$195,412	0.06	1.30	$254,035	1.00	2.810	$713,96
1/1/2018	61	22	$207,136	0.06	1.30	$269,277	1.00	2.867	$771,93
1/1/2019	62	23	$219,565	0.06	1.30	$285,434	1.00	2.924	$834,61
1/1/2020	63	24	$232,738	0.06	1.30	$302,560	1.00	2.983	$902,39
1/1/2021	64	25	$246,703	0.06	1.30	$320,714	1.00	3.042	$975,66
1/1/2022	65	26	$0	0.06	1.30	$0	1.00	3.103	$

		Figure 7C-2. Sample Calculation of EVi for Employee 2 (page 2)					
Date	Age	Beg. Year Risk Adjusted Head Count	Mortality Risk [1]	Retirement Risk [1]	Turnover Risk [1]	Disability Risk [1]	Total Retention Risk
		(7)	(8)	(9)	(10)	(11)	(12) = (8) + (9) + (10) + (11)
1/1/2001	44	1.000000	0.092%	0.000%	2.500%	0.390%	2.982%
1/1/2002	45	0.970181	0.101%	0.000%	2.000%	0.527%	2.628%
1/1/2003	46	0.944685	0.112%	0.000%	2.000%	0.527%	2.639%
1/1/2004	47	0.919757	0.124%	0.000%	2.000%	0.527%	2.651%
1/1/2005	48	0.895377	0.137%	0.000%	2.000%	0.527%	2.664%
1/1/2006	49	0.871528	0.151%	0.000%	2.000%	0.527%	2.678%
1/1/2007	50	0.848193	0.165%	5.000%	0.000%	0.849%	6.014%
1/1/2008	51	0.797185	0.179%	5.500%	0.000%	0.849%	6.528%
1/1/2009	52	0.745142	0.195%	6.000%	0.000%	0.849%	7.044%
1/1/2010	53	0.692655	0.212%	6.500%	0.000%	0.849%	7.561%
1/1/2011	54	0.640284	0.232%	7.000%	0.000%	0.849%	8.081%
1/1/2012	55	0.588546	0.254%	7.500%	0.000%	1.398%	9.152%
1/1/2013	56	0.534681	0.280%	8.000%	0.000%	1.398%	9.678%
1/1/2014	57	0.482933	0.310%	8.500%	0.000%	1.398%	10.208%
1/1/2015	58	0.433634	0.344%	9.000%	0.000%	1.398%	10.742%
1/1/2016	59	0.387052	0.382%	9.500%	0.000%	1.398%	11.280%
1/1/2017	60	0.343392	0.424%	10.000%	0.000%	1.552%	11.976%
1/1/2018	61	0.302267	0.470%	20.000%	0.000%	1.552%	22.022%
1/1/2019	62	0.235701	0.521%	30.000%	0.000%	1.552%	32.073%
1/1/2020	63	0.160104	0.577%	40.000%	0.000%	1.552%	42.129%
1/1/2021	64	0.092654	0.639%	50.000%	0.000%	1.552%	52.191%
1/1/2022	65	0.044297	0.706%	100.000%	0.000%	0.835%	100.000%
Total		11.930249					

[1] Figure 7D shows the decrement rates used in this calculation

Figure 7C-2. Sample Calculation of EVi for Employee 2 (page 3)

Date	Age	Expected Cost E(C$_n$) $(13) = (3) \times (7) \times [1 - (12)]$	Expected Revenue E(R$_n$) $(14) = (6) \times (7) \times [1 - (12)]$	Expected Profit E(P$_n$) $(15) = (14) - (13)$	Discount Factor (16)	Discounted Expected Cost $(17) = (13) \times (16)$	Discounted Expected Revenue $(18) = (14) \times (16)$	Discounted Expected Profit $(19) = (18) \times (17)$
1/1/2001	44	$97,018	$192,096	$95,078	1.0000	$97,018	$192,096	$95,078
1/1/2002	45	$100,137	$206,281	$106,145	0.9091	$91,033	$187,529	$96,495
1/1/2003	46	$103,344	$220,123	$116,779	0.8264	$85,408	$181,920	$96,511
1/1/2004	47	$106,641	$231,688	$125,047	0.7513	$80,121	$174,071	$93,950
1/1/2005	48	$110,028	$243,829	$133,800	0.6830	$75,151	$166,538	$91,387
1/1/2006	49	$113,507	$256,569	$143,062	0.6209	$70,479	$159,309	$88,830
1/1/2007	50	$113,082	$260,720	$147,638	0.5645	$63,832	$147,170	$83,338
1/1/2008	51	$112,042	$263,488	$151,446	0.5132	$57,495	$135,211	$77,716
1/1/2009	52	$110,399	$264,816	$154,418	0.4665	$51,502	$123,539	$72,037
1/1/2010	53	$108,175	$264,671	$156,496	0.4241	$45,877	$112,246	$66,370
1/1/2011	54	$105,400	$263,039	$157,639	0.3855	$40,636	$101,413	$60,777
1/1/2012	55	$101,498	$258,369	$156,871	0.3505	$35,575	$90,557	$54,982
1/1/2013	56	$97,176	$252,313	$155,137	0.3186	$30,963	$80,395	$49,431
1/1/2014	57	$92,491	$244,952	$152,461	0.2897	$26,791	$70,954	$44,163
1/1/2015	58	$87,509	$236,392	$148,883	0.2633	$23,044	$62,249	$39,206
1/1/2016	59	$82,296	$226,757	$144,461	0.2394	$19,701	$54,284	$34,583
1/1/2017	60	$76,786	$215,808	$139,021	0.2176	$16,711	$46,966	$30,255
1/1/2018	61	$63,469	$181,946	$118,477	0.1978	$12,557	$35,997	$23,440
1/1/2019	62	$45,699	$133,626	$87,927	0.1799	$8,219	$24,034	$15,814
1/1/2020	63	$28,033	$83,610	$55,577	0.1635	$4,584	$13,671	$9,087
1/1/2021	64	$14,207	$43,219	$29,013	0.1486	$2,112	$6,424	$4,313
1/1/2022	65	$0	$0	$0	0.1351	$0	$0	$0
Total						$938,809	$2,166,571	$1,227,762

iRevenue	$2,166,571
iCost	$938,809
Evi = iRevenue - iCost	$1,227,762
EWL	11.930249
Annual EVi = Evi / EWL	$102,912

Figure 7D. Decrement Rates used in the sample EVi Calculation								

Retirement Rates		Turnover Rates					Disability Rates	
			Service					
Age	Rate	Age	0	1	2	>=3	Age	Rate
0	0.000	0	0.3	0.2	0.15	0.100	15 - 19	0.00032
50	0.050	25	0.3	0.2	0.15	0.100	20 - 24	0.00093
51	0.055	26	0.3	0.2	0.15	0.100	25 - 29	0.00133
52	0.060	27	0.3	0.2	0.15	0.100	30 - 34	0.00198
53	0.065	28	0.285	0.19	0.1425	0.095	35 - 39	0.00283
54	0.070	29	0.285	0.19	0.1425	0.095	40 - 44	0.00390
55	0.075	30	0.27	0.18	0.135	0.090	45 - 49	0.00527
56	0.080	31	0.27	0.18	0.135	0.090	50 - 54	0.00848
57	0.085	32	0.255	0.17	0.1275	0.085	55 - 59	0.01398
58	0.090	33	0.24	0.16	0.12	0.080	60 - 64	0.01552
59	0.095	34	0.225	0.15	0.1125	0.075	60+	0.00835
60	0.100	35	0.21	0.14	0.105	0.070		
61	0.200	36	0.195	0.13	0.0975	0.065		
62	0.300	37	0.18	0.12	0.09	0.060		
63	0.400	38	0.165	0.11	0.0825	0.055		
64	0.500	39	0.15	0.1	0.075	0.050		
65	1.000	40	0.135	0.09	0.0675	0.045		
		41	0.12	0.08	0.06	0.040		
		42	0.105	0.07	0.0525	0.035		
		43	0.09	0.06	0.045	0.030		
		44	0.075	0.05	0.0375	0.025		
		45	0.06	0.04	0.03	0.020		
		50+	0	0	0	0.000		

Mortality Rate is Group Annuity Table 1983 with margin for males and females

Figure 7E. Probability of promotion from Job Level 1 to Job Level 2 (or Job Level 2 to Job Level 3)

Age	Svc in current job level										
	0	1	2	3	4	5	6	7	8	9	10
20	0.01										
21	0.02	0.10									
22	0.03	0.11	0.15								
23	0.04	0.12	0.16	0.20							
24	0.05	0.13	0.17	0.21	0.25						
25	0.06	0.14	0.18	0.22	0.26	0.35					
26	0.07	0.15	0.19	0.23	0.27	0.36	0.50				
27	0.08	0.16	0.20	0.24	0.28	0.37	0.51	0.70			
28	0.09	0.17	0.21	0.25	0.29	0.38	0.52	0.71	0.50		
29	0.10	0.18	0.22	0.26	0.30	0.39	0.53	0.72	0.51	0.30	
30+	0.10	0.18	0.27	0.46	0.65	0.84	0.83	0.72	0.51	0.30	0.00

800

OPERATOR COMPUTER

802

NETWORK
806

DATABASE COMPUTER

804

FIG. 8

FIG. 9